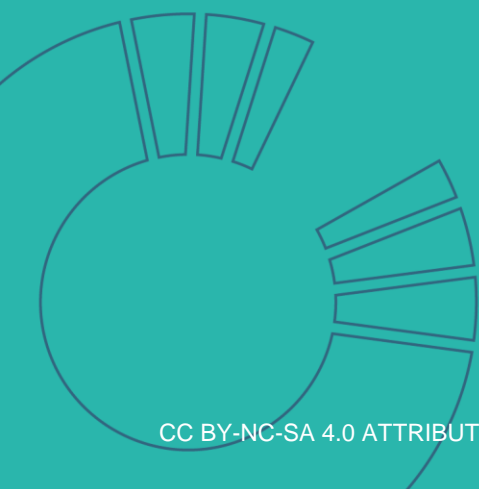


Case Studies in Bioeconomy education, training and skills development

Case study sample: Estonian
Academy of Arts research centre
Sustainable Design and Materials Lab

Estonia

CIVITTA



CC BY-NC-SA 4.0 ATTRIBUTION -NONCOMMERCIAL-SHAREALIKE 4.0 INTERNATIONAL



Funded by
the European Union

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.



Estonian Academy of Arts research centre Sustainable Design and Materials Lab (DiMa)

1 Abstract

Estonian Academy of Arts (EKA) stands as the sole public university in Estonia, offering higher education in art, design, architecture, media, art history, and conservation-restoration. The Research Centre DiMa seamlessly integrates research and teaching activities with sustainable product development and design practices, focusing on two primary research directions: circular design and bio-based material design. It's important to note that DiMa complements rather than competes with the country's more established materials science institutes. Instead, it creates an invaluable opportunity to expand material research and discussions within a local context

2 Target Groups

People interested in sustainable, eco-friendly design bringing together students, researchers, practitioners, and companies.

3 Case Study Category

Art to elicit new ways of thinking and develop skills needed in bioeconomy education

4 Training Provider

Estonian Academy of Arts

5 Region

Estonia

6 Language

Estonian/ English

7 Objectives of the education Format

Other – It is a research centre that links research and teaching with sustainable product design.

8 Final objective of the education format

The objectives of DiMa align seamlessly with the principles of circular design and a circular economy, specifically focusing on the development of sustainable materials and the augmentation of the value of bio-based and residual materials tailored to local conditions.

As a result of the activities to this point, bio-composite materials based on local raw materials have been produced, by using microorganisms, materials have been grown (microbacterial cellulose and composites derived from mycelium) and materials have been developed to enhance the value of waste generated by the oil shale industry. The objective is for the process to yield new, locally relevant and globally salient materials with real use.

9 Scope and context of the education format

DiMa is actively engaged in the circular economy, concentrating on the creation of circular products and services, material design, and research, leveraging EKA's extensive research and teaching experience in this domain. DiMa spearheads various initiatives, including diverse exhibitions related to bio-design. Notably, the bio-integrated design intensive course is among these initiatives. Additionally, DiMa is home to Studio Aine, a collective studio specializing in materials design and development. Studio Aine's research is centered around environmentally sensitive materials, fostering materials awareness, and establishing cross-domain networks. Furthermore, EKA has witnessed the graduation of numerous innovative designers, contributing to the field's ongoing evolution."

10 Specific Skills and competencies addressed

Technical competencies

Valorisation competencies

Transversal competencies

Some technical competencies include: sustainable design principles and practices (recycling, upcycling); research methods and techniques; product design and development.

Some valorisation competencies: entrepreneurship and innovation.

Transversal competencies: collaboration and teamwork; creativity and innovation; critical thinking and analysis.

11 European Qualification Framework level/s

Estonian Academy of Arts itself awards different qualifications:

Level 6. Level 7. Level 8.

12 Main benefit of the participant

As it is a research centre, one can be a part of it, participate in the activities and projects. Outputs are, for example, new products/materials, exhibitions or publication.

13 Main cost categories considered

The main cost categories considered include salaries for two full-time researchers, as well as expenses related to equipment and materials.

14 Importance and impact

Exhibitions and publications have a broad reach, connecting with numerous individuals. The involvement of a substantial number of people is also facilitated through various projects. Additionally, each year witnesses the active participation of students in DiMa's activities.

15 Relevance (of the format)

The format holds great relevance as sustainable design, recycling, and related topics are garnering increased attention and becoming integral to people's daily lives. There is a growing interest among individuals in sustainability, upcycling, and recycling.

16 How can it inspire BioGov.net (Why was it designed in this specific way / what are the success factors?)

In the Estonian context, this initiative is particularly distinctive as the Estonian Academy of Arts stands as the sole public university in Estonia offering higher education across art, design, architecture, media, art history, and conservation-restoration. Furthermore, the absence of similar laboratories devoted to sustainable design in the country sets this initiative apart.

The lab serves as a versatile space for workshops, demonstrations featuring various materials and designs, and small-scale research conducted collaboratively with companies.

17 Data sources

- **Online resources:** <https://dima.artun.ee/en>
- **Resource persons:** Reet Aus, Kärt Ojavee
- **Other sources, if any:** LinkedIn:
<https://www.linkedin.com/company/sustainable-design-and-material-lab-eka/>

